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ABSTRACT

The articles in this volume are written primarily by classroom teachers who share their experiences and offer practical examples of cooperative learning activities. Lesson and unit plans, games, group projects, samples of student work, worksheets, and evaluation forms are included, as well as cooperative learning activities for several grade levels and subject areas. The following articles are included: "Dealing with Misunderstanding in the Cooperative Classroom"; "A Teacher's Point of View"; "Cooperative Learning and Early Childhood"; "Cooperative Learning After One Year"; "Cooperative Learning in the Middle School Social Studies Classroom"; "Teamwork Can Make It Happen in Eighth-Grade Mathematics"; "STAD: Student Teams--Achievement Division"; "TAI Math"; "Science Investigation through Cooperative Learning"; "Collaboration in the Study of a Novel"; "Group Investigation"; and "Cooperative Learning and Creative Thinking." (IAH)

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COOPERATIVE LEARNING II

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COOPERATIVE LEARNING — PART II
THE CLASSROOM TEACHER

This book was
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PRESIDENT'S MESSAGE

Larry Bowser

COOPERATIVE LEARNING

Bruce Joyce's *Models of Teaching* (1986) suggests that the philosophical underpinning of cooperative learning is John Dewey's model for democratic process. Dewey certainly was not the first; Plato's *Republic* was a blueprint for the ideal society and the educational program to support it. In the United States there probably have been more variations on teaching democratic processes in classrooms than any other teaching method. And yet, these efforts have been largely unsuccessful. For the most part, schools are not organized to teach the social and intellectual processes of democracy. Joyce suggests that the reason it has been so difficult to incorporate democratic process into schools is because they require high levels of instructional and interpersonal skills by the teacher. Also, it is cumbersome and slow; parents and educators get nervous about time inefficiency, e. g., "time on task."

School districts' goals and objectives usually include citizenship as a priority. Traditionally, we teach about democracy, but it is not taught through a "hands-on process." It appears that cooperative learning has potential to provide the "hands-on" which has been so elusive in teaching the democratic processes.

Joyce classifies Cooperative Learning as a "Group Investigation" teaching model which is part of a larger group called a Social Family.

The social models combine a belief about learning and a belief about society. The belief about learning is that cooperative behavior is stimulating not only socially but also intellectually and, hence, that tasks requiring social interaction will stimulate learning. The belief about society is that a central role of education is to prepare citizens to perpetuate a democratic social order.

Recent research has centered on three specific cooperative learning models: David Johnson and Roger Johnson of the University of Minnesota; Robert Slavin of Johns Hopkins University; and Shlomo Sharan of the University of Tel Aviv, Israel. The findings have been positive. Classrooms organized so that students work in cooperation rather than competition result in significantly improved achievement. The process develops more positive

feelings towards tasks and other persons, generates better intergroup relations and results in improved self-images for students with histories of poor achievement.

I attended a workshop by Bruce Joyce a few years ago where he spoke about the staff development process needed to successfully implement a new teaching strategy: First the philosophical foundation of the strategy must be provided. But often this is where staff development stops. Yet experience tells us that this "one shot" approach will have little carryover effect in classrooms. Staff development must include *modeling* and *practice* as much as 20 or 30 times after the initial instruction in order to become part of one's repertoire. Even this may still not be enough to keep us from slipping back into old, more comfortable ways of teaching. Research indicates that support from study groups and/or peer coaching is essential before the skill becomes a permanent teaching strategy.

If you are using or wish to begin using cooperative learning in your classroom, please consider Joyce's advice about staff development and teaching democracy. The cooperation you will experience working with colleagues will serve you as it does your students. You will sense a feeling of professionalism which comes from becoming all that you can be.

Best wishes for successfully incorporating cooperative learning into your repertoire of teaching strategies.

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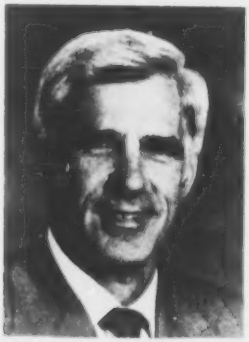

EXECUTIVE SECRETARY'S PERSPECTIVE

Anita M. Pankake

DECIDING WHAT FITS

Suppose every time you went to your clothes closet, there was one and only one outfit. Imagine that no matter what the occasion or activity you wore this single outfit. When invited to a formal dinner, you wore this outfit; when going on a picnic you wore this outfit; even for going to bed you wore this outfit. Among the varied activities of our lives, this singular attire might be appropriate for one or two occasions; however, it seems impossible that it would be appropriate for all occasions. Eventually, the singular outfit would become boring to us and to others.

But, the single outfit closet is rare, if not nonexistent. Generally we have many choices. Once we know the occasion, we go to our closet and select the outfit that best fits the situation. If we are not sure, we will sometimes ask for advice on the appropriateness of our choice. It is even the case that in a given situation, we may decide to go shopping and acquire some new items of clothing, if we don't have what is necessary. So it is with our selection of instructional strategies.

Just as our closet has different clothes appropriate for different occasions, so it should be with the instructional strategies in our professional closet. No one strategy can possibly fit all of the activities and varied needs of the students with whom we work. Our professional closet needs to have a variety of strategies from which we may select the most appropriate. If we narrow our strategies to one, soon we will find both ourselves and our students bored with, perhaps even disliking, the learning activities we plan.

This issue of the *KASCD RECORD*, as well as the last, is focused on cooperative learning. Cooperative learning can be a powerful means for organizing and delivering instruction. Both children and adults should learn to work cooperatively. As you read the articles in this issue, consider adding cooperative learning to your professional closet along with the other effective instructional practices you have acquired over your years of classroom experience. Study the research surrounding cooperative learning. Do your own classroom research with cooperative learning strategies so you will know when they are most appropriate. Make these strategies part of your professional wardrobe.

But remember that cooperative learning is not a panacea. Like the outfits in theprevious image, no one can fit all the situations in which we find ourselves. Thus, it is with instructional strategies. Cooperative learning cannot fit all instructional situations or learning needs of the populations we serve. Just as you make decisions regarding your personal wardrobe, so it is with your professional one.

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PAST PRESIDENT'S THOUGHTS

Gary Marshall

Teachers who use cooperative learning should be sure they have had adequate training in order to successfully begin a cooperative learning program. Normally, workshops will include up to five days of teachers working with other teachers in cooperative and competitive situations so they can experience the difference firsthand to get an idea of how students feel in those situations. The workshop should include an observation and reflection session in which teachers discuss the professional and personal significance of the cooperative experience.

In addition to participation in training sessions, guidelines have been established by David and Roger Johnson. The guidelines can help teachers design a cooperative learning program for their classrooms. Following is a condensed version of those guidelines as listed in "What We Know About Cooperative Learning," published by *Education Research Service*.

1. Clearly specify the objectives for the lesson, including both the task and goal structure *and* the small-group collaborative skills that will be emphasized during the lesson.

2. Plan the instructional materials to promote interdependence. Teachers should distribute materials in ways that communicate that the assignment is a joint effort and that students are in a "sink or swim together" situation. Giving each group member only a part of the materials needed to complete a task or giving only one copy of a worksheet to the group are ways of doing this.

3. Assign students complementary and interconnecting roles. For example, assign students to be summarizers, checkers, accuracy coaches, ...

4. Observe the students interacting to see what problems they may be having in completing the assignment and in working collaboratively. Provide assistance only in the role of a consultant. Clarify instructions, review important procedures, answer questions only if none of the students in the group know the answer, and suggest more effective procedures and behaviors for working together if groups are having problems cooperating.

5. Evaluate the students' work; give them feedback as to how their work compares to the criteria of excellence, and give the groups time to assess how well they worked together and to plan how to improve their collaboration.

Cooperative learning methods are not suited to every classroom situation. Teachers should understand the task type and its desired outcome in order to determine if a cooperative learning method is appropriate for reaching the outcome.

Cooperative learning is just one teaching strategy in the teacher's arsenal and the teacher should be able to determine what tasks are best suited for that strategy.

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DEALING WITH MISUNDERSTANDING IN THE COOPERATIVE CLASSROOM

Remember Gilda Radner's character Emily Litella on the old "Saturday Night Live" television show? She would misunderstand something she heard, like mistaking "conserving our natural resources" for "conserving our national racehorses." She would then launch into a long editorial questioning the practice she thought was being recommended. Her trademark response when informed of her mistake was "Never mind."

Misunderstandings often occur in classrooms as well. Unfortunately, they are often neither amusing or easily resolved. Misunderstandings are especially likely to occur when an innovation is introduced (e.g. cooperative learning), which changes the structure and the traditional relationships in the classroom. Teachers must be alert to potential misunderstandings and plan to deal with them effectively.

Misunderstandings sometimes occur concerning the goals and outcomes of cooperative learning. High-achieving students may feel that they are being asked to do all the work in their group, and that they are being penalized for students in the group who may be less motivated to work. Parents of the high-achieving students may express concern over this change, particularly if group grading is involved and the grade of the high-achiever can be lowered if the group does not work together effectively.

Misunderstandings about the goals and purposes of cooperative learning often center around the concept of positive interdependence. While most teachers working to implement cooperative learning recognize the need for each student to "pull their weight" in the cooperative group, it is sometimes difficult for students and parents to understand this idea. Teachers can ease some of the misunderstanding about the goals of cooperative learning by carefully explaining the purposes and benefits, both academic and social, of cooperation to students in language appropriate for the students.

In order to minimize misunderstandings about the goals of cooperative learning, teachers need to clarify how cooperation will be used. Student and parent concern can be reduced by reassurances that cooperation is used as a technique to practice ideas, skills, and information. If it is clear that the student will complete tests and other assessment activities which are graded on their

own and that the grade earned will reflect individual effort, much of this concern can be reduced. Teachers often find that students and parents respond well to bonus points given for successful cooperation in groups, but are less agreeable when a student can be penalized for others who have not contributed to the group.

Misunderstandings in cooperative groups can also be sources of concern for students and parents. Lyman and Foyle (1990) stress the importance of group building activities to help the students learn to know each other and practice the skills of cooperation. Group building activities give students time to get to know one another, to appreciate the individuality of others, and to experience success in working with others. As cooperative learning is introduced, students should have the opportunity to encounter other students in the class at least once in group building activities. Awareness of others reduces concern and helps to reduce the likelihood of misunderstanding.

Ineffective communication between students can also promote misunderstandings in cooperative groups. If students are to work together effectively, practice in listening skills is essential. Students must also be aware of how nonverbal messages and tone of voice can alter the message being sent and cause misunderstanding. A useful strategy in working with communication skills is to use role-playing in which class members act out effective and ineffective communication practices. These role-play situations can be discussed with students and can serve to improve communication in the small group.

Teachers can also ease misunderstandings about cooperative learning by being alert to the verbal and nonverbal signals given by students which indicate unhappiness or frustration. As teachers circulate around the groups, they can be looking and listening for signs that individuals are upset. Often, a brief, informal individual conference with the teacher, occurring after groups have met, can reassure students of their competence and address issues that are bothering the students. Cooperation comes more easily to some students than to others, and teacher empathy can help students feel more comfortable about working in groups.

Fatigue and boredom also contribute to misunderstanding. Successful interaction in the cooperative group requires hard work: active listening, awareness of others, and social skills. Some students complain, with some justification, that they could complete the required learning task more easily working alone. Like any strategy, cooperative learning can be overused. In

addition to varying the instructional strategies they use, teachers can sometimes give students choice about working cooperatively or individually.

Misunderstanding can also occur when too much cooperation is expected too quickly. For groups unfamiliar with cooperative learning, it is especially important to balance cooperation with other instructional strategies and to introduce skills slowly and sequentially. Too much change happening too quickly is often a source of misunderstanding and unhappiness.

In any group of people, misunderstandings will occur periodically. Misunderstanding is more likely when students are asked to work actively together in groups where individual skills, personalities, and goals can differ widely. Teachers can reduce the potential for misunderstanding and resolve misunderstandings that do occur through effective communication with students and parents, using group building activities, and teaching needed communication skills. In this way, teachers won't have to say "never mind" when a colleague asks how cooperative learning is working.

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Guest Editor

A TEACHER'S POINT OF VIEW

I'd like to begin this article by introducing myself and telling you something about my background. My name is Sheryl Gill. I teach at Baldwin Junior High School, which has just adopted the middle school concept this year. I have a sixth grade classroom, which is basically self-contained. I am beginning my seventh year of teaching. I am a member of the Kansas City Metropolitan Effective Instruction Cadre. A little over a year ago I attended a workshop on cooperative learning. I was so excited over it, I decided to try it in my classroom. This year will be my second year using cooperative learning in my classroom.

I want you to understand that I am first and foremost a classroom teacher. I have not been trained in depth by Slavin or Johnson & Johnson, although I have been to workshops which presented their ideas. I have tried the following material in my own classroom. I want to begin by giving you several important reasons to use cooperative learning.

1. In the real world, skills and knowledge are used cooperatively.
2. Cooperative learning promotes social growth.
3. Cooperative learning harnesses the greatest single motivator, peer pressure, and makes it beneficial.
4. Cooperative learning promotes life skills.
5. Studies have shown an increase in learning, achievement, and performance for all members.
6. Research tells us that cooperative learning allows for a freer exchange of thoughts and ideas without fear of failure.
7. Individual achievement results from the support and assistance given from each group member.
8. Cooperative learning increases problem solving skills and develops higher level thinking skills.
9. Cooperative learning increases student self- esteem.
10. Research shows that cooperative learning should be used in the classroom when we want students to learn more, like school better, like each other better, and make students responsible for their learning.

The basic elements of cooperative learning are positive interdependence, face-to-face interaction, individual accountability, and interpersonal and small group skills. The element of cooperative learning that I want to stress is the teaching of social skills so a student can be successful working in a learning group. These behaviors must be taught to students and practiced by them. Behaviors that are necessary for a successful learning group are willingness to contribute information and opinions, asking for information and opinions, listening to others, and encouraging others in the group to give information and opinions. Higher level behaviors that will evolve from cooperative learning are the abilities to describe feelings, paraphrase, express support and acceptance, summarize, coordinate members' efforts, and give direction to the group's work.

A plan to achieve the appropriate behaviors is needed. To group students, divide them heterogeneously into groups of four or five. In each group, place a high ability student, a low ability student, and two or three average students. This gives the groups an equal chance of competing with one another, once the emphasis changes from social skills to academic accomplishments. The first activity the groups should work on is that of social skills. Discuss each skill. Explain how one would look, how one would sound, and what one should be doing while using appropriate behavior. It is effective for the teacher to use one learning group and model each behavior for the class. Following this activity, discuss how group members helped one another. When teaching group social skills it is helpful to use activities which are opinion orientated, where the group must come to a consensus and explain their reasoning. If an activity is used where there is a right and a wrong answer, the group will be held accountable for each member understanding how the correct answer was attained. About once a week I have one member of each group serve as an observer and chart the number of times each group member models each behavior while doing an activity. We then discuss the progress of our group behavior skills, and talk about how we can improve and build these social skills.

The first activity presented is used to teach students to work together without being bossy, grabby, or without even talking to one another. In this activity members of each cooperative learning group must piece together five squares. I gave each group an envelope which contained 15 pieces. The students in each group are to divide the pieces as equally as possible. Members of the group must piece together five squares without talking, or grabbing pieces from one another. If a member of a group sees how the square will fit together using a piece that another member has, he must motion to that member to place the piece in that position. No talking.

When all the groups have their squares pieced together, discuss the behaviors members of the group used to work together. After doing this activity students will have learned how to encourage others to participate and work together as a team.

The next activity is a social studies lesson that I took from the Exchange City manual. It is a good activity because group members must come to a consensus. This activity lists 24 items a frontier family going West might include in their wagon. Each group must decide which items are wants and which are needs. Then the members must decide which item to eliminate because the wagon is too heavy to cross the river. Five more items must be eliminated because of mountains. Everyone in the group must come to a consensus on which items to eliminate. Each group should choose one person to be a spokesperson and to explain why the group made the choices it did.

Another activity is a jigsaw activity, taken from Robert E. Slavin's *Using Student Team Learning* book. This activity can be used very well in reading and social studies. Each group numbers off 1-4. Then you hand out an article on learning styles, taken from The 4-MAT System by Bernice McCarthy, for each group member to read. Each group member will be reading about a different learning style. After group members complete their reading, have the ones, twos, threes, and fours meet together and discuss their type of learner. Identify the characteristics of the learning style the group read about. After the group has identified all the characteristics of the type of learner, go back to the original group and talk to the other members to identify the characteristics of the other three learning styles. When finished, you should have characteristics of all four learning styles.

During this presentation, I have tried to give activities to teach group social skills, and give you ideas on how to use cooperative learning in your classroom. The main idea I'd like to leave you with is if it doesn't work the first time, don't give up trying. Every lesson a teacher teaches is not made for cooperative learning, but cooperative learning is an excellent teaching strategy to get students involved and excited about learning.

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COOPERATIVE LEARNING AND EARLY CHILDHOOD

Each child in early childhood is gaining skills and developing attitudes which will affect his/her future. The essential goal of a teacher is to provide opportunities that allow children to work together. A child's most valuable learning from these experiences is the reward of a positive feeling about self and others. Being involved in the process of working together promotes sharing of ideas and materials, taking turns, and being considerate of others. As a child interacts with other children he/she develops thinking skills and solves problems successfully.

Early childhood cooperative learning activities can focus on developing a positive self through the expression of feelings, group discovery, and group decision-making. All areas of the curriculum can include cooperative learning as a teaching strategy. The implementation of cooperative learning attempts to develop the full potential of all children. Expectations can be aligned with the unique needs of each individual involved in the cooperative learning activity.

FISH POND

Objective:

Students in groups of three will sort fish cards according to categories.

Task:

Students will work together in threes selected by the teacher. Their task is to practice grouping skills, use expressive language, and practice fine motor coordination.

Materials needed for each group:

fishing pole with magnet on end of string
paper fish cards with pictures for classification
paper clip on each fish card
large bucket for pond or designated area for pond
meat trays for sorting fish cards

Present initial material:

Which doesn't belong? and why? (Example)

Interaction:

1. Discuss the fish cards and then put them into the pond.
2. Introduce the meat trays and model how these will be used to sort fish as a child pulls one from the pond.
3. In each group children take turns catching a fish.
4. In each group children work together to decide how to classify the fish.
5. Children will find many different ways to classify fish.
6. The activity continues until all fish are caught and classified.

Monitor:

Each fish pond (behavior and classification decisions).

Evaluation:

At the end of the activity, ask children to tell why they put certain fish together. Why did you put these fish into a group? What is the difference between these two groups? Can you group them another way? Have children share grouping ideas in a whole group setting.

Reward groups for success:

Positive comments about their behavior and good thinking skills.

Variation: jigsaw

SHAPE DETECTIVES (jigsaw)

Objective:

Students in groups of three will become aware of the many things around them that are made of basic geometric shapes.

Task:

Students will work together in threes selected by the teacher. Their task is to practice observational skills, conceptualize shapes, and practice classification skills.

Materials needed for each group:

Students in a group will wear badges of the same color. Each student in a group receives three shape cards (three squares, three circles or three triangles) that are of the same color as his/her badge. Badge has shape also.

Present initial material:

Material from math readiness, science readiness, or reading readiness.

Interaction:

All circle detectives work together in a search through the room for objects that are shaped like a circle. Square detectives work together and triangle detectives work together. They take turns taping their shape cards on or near an object which matches their shape. When all of the shape cards have been distributed in the room the detectives return to their office (or group of children who have the same color badge).

Shape detectives stay in their color group. The circle detective shows his/her group the objects that are circles. Each shape detective shares their findings with group members.

Monitor:

Check behavior of students and shape matching.

Evaluation:

Bring students into a whole group. Tell one thing that is shaped like a circle. What kinds of objects did you find that are shaped like this? (Hold up a triangle shape.) What shape is this book? (square) What other things in the room have the same shape as this book?

Reward:

Crackers of different shapes at snack time.

RHYME TIME

Objective:

Students in groups of three will manipulate and match sets of objects that have rhyming names.

Task:

Students will work together in threes selected by the teacher. Each group will have a rhyming box. Their task is to practice auditory discrimination skills and use matching skills.

Materials per group:

rhyming box (shoe box covered with contact paper)

pictures and/or objects that rhyme

Present initial material:

Reading readiness and language games and listening to nursery rhymes and stories that rhyme.

Interaction:

Present the rhyming box and the contents. Name and discuss the objects being sure the children know the name being used in this game for each subject (bunny/rabbit). Model one or two rhyming sets.

Students gather in their work center. The first student closes his/her eyes and removes one object from the rhyming box. The student looks at the object and names it. The student returns to the box and looks for the matching rhyming object. The student says the names of the two objects and the group decides if these object names rhyme. If the students agree that the objects make a rhyming pair the objects are placed on the table. If the objects do not match students continue the search together. The next student in the group repeats the process and the search continues until all objects have been matched.

Monitor:

Student behavior, decision-making skills, auditory discrimination skills.

Evaluation:

What other words rhyme with cat and hat? Look at the words cat and hat on the chalkboard. What is different about these words? What is the same about these words? Underline the letters "at" in each of the words. Continue to add other word to the list. Other rhyming families may be reviewed in this same manner.

Remember to discuss student behavior and decision-making skills with the students in a positive way. These are very important skills that develop when using cooperative learning.

GRAPHING CONCRETE OBJECTS

Objective:

Students in groups of four will use concrete (real) objects to make sets and compare the contents of the sets.

Task:

Students will work in groups of four selected by the teacher. Each group will have real objects to be placed on a graphing board. Their task is to compare numbers and sets, less, same, more.

Materials needed for each group:

Graphing board (laminate)
Small objects for graphing (beans, small toys, buttons, bottle caps, etc.)
Comparison board (less, same, more)

Present initial material:

Science and math readiness lesson on less, same, more and procedure to be used in graphing.

Interaction:

Each group has a box of objects and a graph board. Each student in the group takes turns choosing a different object to place on the graph and completes one column on the graph. (Have one or two extra types of objects to graph that will remain in the box. This allows everyone to have a choice in choosing objects to graph). When the graph is complete students work together in their group to record which objects there are more, less, or same. Use comparison board to record this information.

Monitor:

Student behavior in groups, graphing of real objects, and comparisons of sets.

Evaluation:

Have groups tour other groups. Let students observe graphs made by other groups. Ask which object has more, less? Do you have the same of any objects?

Reward:

Positive comments on behavior, graphing and comparison. Candy could be graphed also, then used as reward. Halloween-shaped cookies, gummy bears, fruit, vegetables, shoes, etc., are other examples of graphable objects.

ZOO KEEPERS (more, same, less) (addition)

2 students
1 zoo animal picture
5 objects per student, color A
5 objects per student, color B
Bell

Blue Zookeepers feed your animal (ding, ding, ding) blue chips. Red Zookeepers feed your animal (ding, ding) red chips. Zookeepers, "Who fed your animal more chips?"

Red Zookeepers feed your animal 3 red chips. Blue Zookeepers feed your animal 4 blue chips. Zookeepers, "Who fed your animal more chips?"

Zookeepers, "How many chips did you feed your animal?"

Tiger Zookeepers, "How many red chips did you feed the tigers?" "How many blue chips did you feed the tigers?" "Who fed the tigers less?"

PIZZA FACTORY

Main Objective:

Children will construct mini-pizzas on an assembly line.

Division of Students:

The teacher will determine the number of jobs and number of assembly lines according to class size. Two assembly lines may be set up parallel to each other at a table. Pizza toppings may be added or taken away to provide the number of jobs needed for a particular class size. Ideally 8 to 10 pizzas are made on one assembly line. Extra pizzas can be made for special teachers, principal, secretary, student helper, another class of students, etc.

Input:

1. Workers wear special kinds of clothing.
2. Germs.
3. Workers make new things.

Interaction:

1. Division of labor
   a. Demonstrate job.
   b. Children name job.

PIZZA FACTORY
(assembly line/mini-pizza)

JOB NAME	JOB DESCRIPTION
SMASHER	Flatten refrigerator biscuit on foil.
PAINTER	Brush pizza sauce on biscuit.
SPRINKLER	Sprinkle mozzarella cheese.
DOTTER	Three black olive slices.
PEPPERONI	Two pepperoni slices.
GREEN TOPPER	Green pepper pieces.
WHITE TOPPER	Onion.
INSPECTOR	Shape foil pan, put pizza on baking pan.

c. Teacher sets up assembly lines.
d. Students assigned jobs.
e. Teacher monitors as students perform jobs.
f. Bake according to directions on biscuit container.

2. Product is shared.

Evaluation:

1. Verbal responses on product and working together.
2. Read: The Little Red Hen. What would have happened if someone had not done their job?
3. Children make a collage or display of other items that might be made on an assembly line.
4. Vocabulary: work, job, cooperation, working together, assembly line, factory, inspector, manufacture, etc.

Resources:

Fiarotta, P., & Fiarotta, N. (1977). *Be what you want to be!* Workman Publishing Company, 231 East 51 Street, New York, New York, 10022.

Fleming, B. M., & Hamilton, D. S. (1977). *Resources for creative teaching in early childhood education.* Harcourt Brace Jovanovich, Inc., New York.

Wichita Public Schools. *Activity based curriculum for elementary education.*

SHAPE-O

(shape recognition and positional terms)

4 students
1 box per group
1 shape per person (star, circle, triangle, square)

Beginning lesson:

Play "Simon Says" using positional terms. Put your hands above your head. Put your foot under your chair.

Directions to follow:

Put the star on top of the box. Put the triangle inside the box. Put the circle behind the box. Put the square under the box. Put the star and the square in front of the box. Put the triangle next to the box. Continue.

Students act as checkers.

Teacher monitors.

Extension:

Serve different shaped crackers at snack time.

Students draw a picture following specific directions. Draw a house in the middle of the paper. Draw a tree beside the house. Draw a sun above the house. Draw a dog under the tree.

ROLY POLY ICE CREAM

Teach students science concepts and have fun working together to make a favorite treat!

Objective:

To observe changing states of matter.

Task:

Groups of 4 students will make ice cream using a homemade miniature ice cream freezer.

Ingredients needed (4 students):

Ice Cream Mixture	Utensils
1 cup milk	fork to beat egg
1 cup cream	small bowl for egg
1/2 cup sugar	1/2 cup measure
1 egg, beaten	serving spoon and bowls

Materials for freezer:

1 lb. coffee can and lid
3 lb. coffee can and lid
ice
coarse salt
dippers for salt and ice

EACH STUDENT NEEDS A PAIR OF GLOVES OR MITTENS

Interaction:

1. Each student is responsible for putting one ingredient of the ice cream mix into a 1 lb. coffee can. (milk, cream, sugar, egg).
2. Teacher covers the 1 lb. coffee can with plastic lid and helps students place can of ice cream mix inside the larger can (3 lb. coffee can).
3. Students work together to pack layers of ice and salt around the can of ice cream mix.
4. Teacher covers the 3 lb. can with lid.
5. Turn can on side. Children continue to work together and roll can back and forth to each other for approximately 15 minutes. Music and movement ideas can be added for part of this time.

Monitor: help as needed, direct observations—

6. As ice cream begins to freeze have children observe frost that forms on the outside of the large coffee can (e.g. condensation).
7. Open a can and have children observe ice crystal formation in the ice cream mix.
8. Observe ice in large can —change— melting ice.

Evaluation:

1. Taste of product. UMMMhhh!
2. Work is sometimes hard but get reward if keep trying to do best.
3. What made the liquid change into a solid? What happened to the ice? Why did it melt?
4. Read and discuss: The Greatest Pumpkin Ever.
5. Vocabulary: liquid, solid, frost, ice crystals, cold, condensation, freeze, melting.

Extensions:

Nutrition—study of milk

Math—thermometer, record temperature at different stages

Resources:

Lindberg, D. H. (January, 1989). Liquid to solid: A tasty freeze. *Science and Children*. p.19. Activity Based Curriculum for Elementary Education (supplement), Wichita Public Schools.

MAGNET FISHING

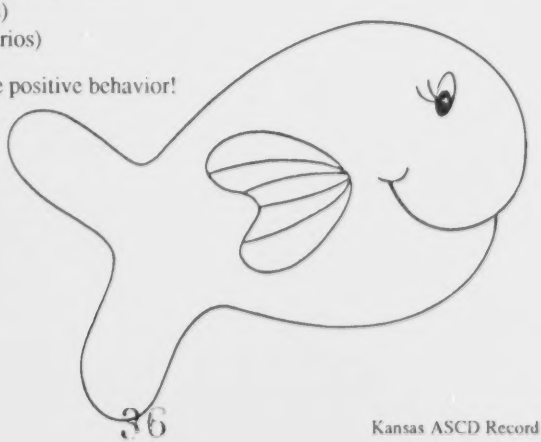
2 children
fishing pole with magnet, 1 per group
set of construction paper fish
objects taped onto fish

Introduce magnet to children.

Children take turns "fishing" with the pole and magnet. Have child predict which fish they think can be caught with the magnet. Child then tries to catch the fish. If fish is magnetic put fish onto a paper with "smiley fish." If the fish is not magnetic put the fish onto a paper with the "Sad fish." Continue until all fish have been caught.

Eat Nioblin Fish Snacks:
fish (fish crackers)
fishing poles (stick pretzels)
rocks (peanuts)
bubbles (Cheerios)

Always reinforce positive behavior!



DINOSAUR DIG

Objective:

Children will discover the need for bones and purpose of bones.

Task:

Students in groups of two will "dig for dinosaurs" and then construct an imaginary dinosaur using chicken bones.

Materials:

Early in the year request parent help in collecting clean chicken bones. Soak the bones in household bleach for one day. Dry the bones for a couple of days. When ready for the lesson bury bones in dishpans filled with rice or go outside and bury bones in clean sand.

Input:

1. What is a skeleton? What does the skeleton do? Do other animals besides people have skeletons? Name some. Introduce rabbit or chicken bones (skeleton). What kind of bones are they? Why won't they stay together? Why do you need bones? Compare pictures or models of skeletons of humans, animals, dinosaurs.
2. Have children sort bones by shape. Try to identify bones relating to the human skeleton.
3. Play "Simon Says" to develop body awareness.
4. Using string and 34 pieces of macaroni have the children make a model of the human backbone. It can be moved to show them the many positions the spine can take.
5. Sing the skeleton song . . . the ankle bone's connected to the leg bone, ...

Interaction:

1. Each group of two students digs carefully in a dishpan filled with rice using a spoon and small brush as tools. Be very careful when digging. When children find an article (bone, . . .) place it on a tray.
2. After "digging for dinosaurs" children continue to work together to invent an imaginary animal or dinosaur skeleton using the chicken bones and Play Doh.
3. Children may cover the dinosaur with paper, fabric, etc.

Monitor "dinosaur digs" for behavior and design decisions.

Evaluation:

1. Display imaginary designs and discuss.
2. Give each child a life-size piece of paper. Children draw around their partner who is lying on the paper. Each child draws skeleton of self.
3. Vocabulary: skeleton, bones, leg bones, backbone, wing bones, support.

Resources:

Williams, R. A., Rockwell, R. E., & Sherwood, E. A. (1987). *Mudpies to magnets*. A Preschool Science Curriculum. Mt. Rainier, Maryland: Gryphon House, Inc., p. 117.

Heath Science, Level K, D.C. Heath and Company.

COPY CATS

Objective:

Construct and match patterns

Task:

Construct and duplicate patterns using unifix cubes.

Materials:

12 paper plates
set 1 - 36 unifix cubes in variety of colors for builder # 1
set 2 - 36 unifix cubes (identical to original set) for builder # 2

Input:

Whole group activity — Make a pattern like mine. What colors did I use? What is the first color? What is the last color? How many of the first color are there? What color comes next?

Other pattern activities from BOX IT AND BAG IT.

Interaction:

1. Builder # 1 makes a pattern using three unifix blocks and places them on a plate.
2. Builder # 2 builds an identical pattern and puts blocks on another plate.

3. Alternate the making and duplicating task.
4. Continue the process until six matching patterns have been constructed.
5. Teacher arranges the plates for "concentration" by placing a pattern of unifix cubes under each.
6. Builders now play "concentration". The children take turns lifting two plates to see if they can find two matching patterns. If the block patterns match, the child takes the blocks and removes the plates from the game. Continue until all blocks have been removed.

Monitor pattern making and duplication process. Stress the importance of their job. Reinforce ability to work together while constructing game and playing the game.

Evaluation:

Look for patterns in everyday life.

Extension:

Patterns can become more difficult and be constructed of more than three blocks.

Marcia L. Seaton
Benton Grade School
Benton, KS 67017

COOPERATIVE LEARNING AFTER ONE YEAR

The William Allen White Elementary School (Emporia, Kansas) staff became interested in Cooperative Learning during 1987-88. Their first year of teaching Cooperative Learning was in 1988-89. The following reports are based on their first-year experiences with Cooperative Learning.

KINDERGARTEN

Kindergarten is the first structured learning experience for many children. It is often the first time they have been in a room with large numbers of students and only one teacher. These small children are faced with the task of learning many academic skills regardless of their age or maturity level. During this year a very important goal in my classroom is to help each child grow from a very natural self-centered awareness to becoming a part of our class—a friend and student. They work to be considerate of others; caring, sharing, taking turns, and working together.

Cooperative activities help the students work on the process of life skills, while learning academic skills. Cooperative Learning groups work with the child's natural desire to observe and communicate. These groups encourage all children to develop and use language skills. Listening, speaking, and thinking skills must be used when working with others as they share ideas, give directions, and praise or encourage friends.

The age appropriate multi-sensory approach appeals to different learning modes. During CooperativeLearning activitities, visual, auditory, and kinesthetic skills are used in ways different fromthat of teacher-directed pencil and paper activities. Cooperative Learning groups are a natural classroom management technique when using mathematics manipulatives and activity-based science lessons.

The best part . . . ALL STUDENTS can experience success through the shared experiences in a COOPERATIVE KINDERGARTEN !!!!!!!!!!!!

FIRST GRADE

In first grade, a major emphasis of cooperative learning was for the children to learn to work together. This was best accomplished in groups of two and occasionally in groups of four. It seemed that the students had more difficulty working in groups of four. They had a tendency to let one or two members of the group do all of the work.

I used cooperative learning in math, spelling, and reading. Our math series had cooperative problem-solving activities to use with groups of four. When learning new math skills after teacher-directed instruction students would work with a partner on the page from their math book. Sometimes they each had a copy of the page, sometimes they took turns reading the problem and writing the answer, and at other times one person was the reader and one was the writer. Cooperative groups worked very well when doing word problems as they could help each other with reading the words and choosing the correct operation.

Cooperative groups in spelling worked mostly on choosing the correct spelling words to complete sentences. This helped the student who had difficulty in reading. Students also helped each other practice the spelling words.

For reading, students read to each other. On difficult workbook pages they sometimes worked with a partner. A reading group would work together to find the correct sequence of events for a particular story from our reading series by using teacher-made sentence strips or shapes appropriate to that story which contained events from the story.

Throughout the year my students became more confident in themselves and happier little people. Each one during the year had had the opportunity to help someone else. They looked forward to working with their group and shared the work load of the group much better.

SECOND GRADE

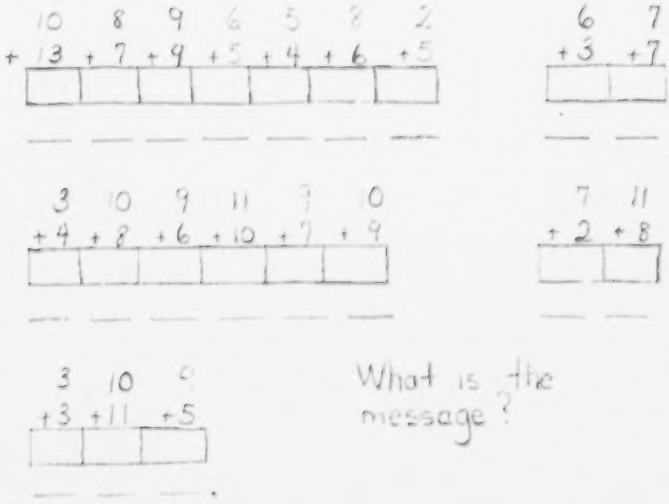
I use cooperative learning in my second grade classroom to practice skills in math, reading and creative writing and also to accomplish special projects such as group art, thank you notes and class newspaper articles. I have discovered that second grade children need modeling and practice to become successful using cooperative learning groups. Role playing the group process helps children understand what they will be expected to do. Group builders are a very necessary part of the establishment of successful groups. The children may practice their roles while working on a fun worksheet. Group builder activities should be interesting and have a high success level. To help children distinguish when they may talk quietly and help each other and when they should work individually, I establish a procedure for group work to be done on the floor and individual tasks to be completed at their desks. I never record group work grades. When grading is necessary, I use individual test

scores. While working on learning the material together, the class establishes pride in their team. I do encourage earning team points for completion of work. The top two teams are rewarded at least once a week.

Group _____

Add the digits in each group. Substitute the appropriate letter of the alphabet to solve.

1	A	8	H	15	O	22	V
2	B	9	I	16	P	23	W
3	C	10	J	17	Q	24	X
4	D	11	K	18	R	25	Y
5	E	12	L	19	S	26	Z
6	F	13	M	20	T		
7	G	14	N	21	U		



What is the message?

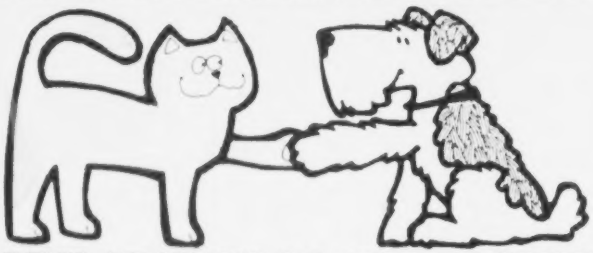
THIRD GRADE

In third grade, many subjects lend themselves to various ways to cooperate with other students while learning. I emphasize the "process" at this age and stage of development. I vary who each child works with quite often to ensure cooperation with everyone in the classroom. Our new spelling series includes challenge activities. These are done in pairs. Each pair of students works together on a common answer sheet. I present cooperative learning awards to those pairs who worked well together and have all the correct answers. (sample included). Noise level is very low because each pair does not want the others to hear their answers.

Many math concepts can utilize our small individual chalkboards. We work in groups of four. There is a material gatherer, monitor (leader), and three participants. The monitor dictates the problem, the others work it and hold it up, and the monitor checks the answers. Roles change each time we do this activity.

In third grade Social Studies, we study many different communities. After modeling a unit of study with the entire class, I allow the children to choose a community of interest to them and form groups of four or five. Each group is responsible for completing a notebook of information (sample included). Jobs are determined by the members of the group: reader, recorder, information seeker, artist, discussion leader, and reporter. All students should encourage each other. The teacher only needs to supply enough worksheets and materials for a few students for each community, thus saving a lot of paper. This also teaches the students they can learn from each other when they share their information.

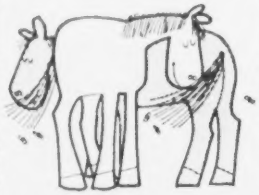
When we work in cooperative pairs or groups, we physically meet somewhere convenient in the room. If a child misbehaves, they are removed from the group, but can still benefit from listening to the rest of the members' responses. Many students are feeling successful by having pride in their products, knowing they had a part in completing them.



DECLARATION OF COOPERATION
Awarded to _____, who is getting better at getting along with others.
official signature: Mrs. Lang

TO: _____
THANKS FOR COOPERATING!

IT'S THE WAY TO WIN.
SIGNED, Mrs. Lang



THINGS GO BETTER WITH COOPERATION
Thanks for helping,
Mrs. Lang !

Vol. 8, No.4/Fall, 1990

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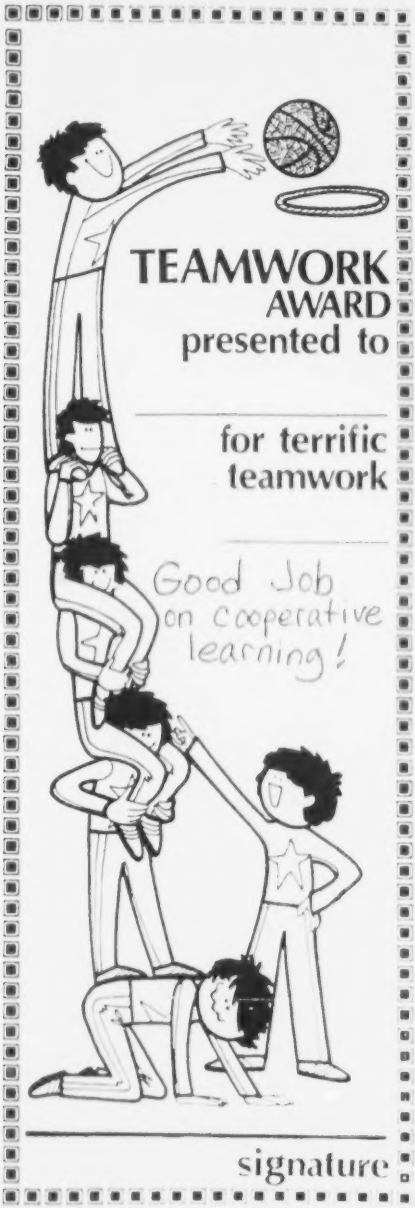
TEAMWORK
AWARD
presented to
for terrific
teamwork
Good Job
on cooperative
learning!
signature

COMMUNITY
REPORT
NAME: _____
___ MAP
___ VOCABULARY
QUESTIONS AND
___ ANSWERS
___ WORKSHEETS
___ PICTURES
GIVEN BY: _____

FOURTH GRADE

Learning cooperatively takes place in a variety of ways in my fourth grade classroom. I've found that group builders have helped the groups learn the process of learning together. Carry-over does take place. The process comes together easier for those students who were in cooperative classrooms during third grade. Word finds, crossword puzzles, and mind bender type activities work great for group builders.

The Weekly Reader is set up nicely to use Jigsaw. Each student in a group is assigned a different article to read. Those students with like articles then meet in expert groups to pick out the main ideas of their articles. The "experts" then return to their groups to teach the information. I follow up with a quiz on the articles or the questions at the back of the paper can be assigned.

My students are assigned to different groups for math and social studies. They usually sit in their math groups as a table group, but for social studies they move to various parts of the room for work on a worksheet, study questions, or to study for a test. These groups are usually changed at the end of the nine weeks and also at least once in the middle of the quarter. I use mid-term and nine-week grades to determine their groups.

Think-Pair-Share is used a lot in English and reading. I give the students a problem, and they write an answer on their individual chalkboards. Then they turn to a neighbor to share their answer. Then the answers are discussed with the whole class. This takes the least amount of preplanning on my part, gives me fewer papers to grade, and also gives me a quick check of how learning is progressing.

I've seen some very positive things happen with my students. One student, a bright boy, thought he could do the work faster by himself, so he really didn't want to work with a group. He was right. But after visiting with him, he was convinced that he could use what he knew to help the group. The group also helped him to learn some needed social skills. Cooperative Learning requires all students to take part in learning. Slower students are encouraged to participate, rather than sit back and make a failing grade.

Several special projects that I have used are included. The Kansas activity can be easily adapted for many other topics or for other subject areas. We enjoyed making the jelly for parents for a Christmas gift, but the idea could also be adjusted to fit other craft projects.

Cooperative learning has helped my students feel good about themselves. I've found that it works best to try one type in one subject area at a time when your first begin. It's been great having other teachers in my building to talk to when things aren't going well, as well as to be able to share all of those exciting things that work.

FAMOUS KANSANS
(Group Investigations Approach)

1. Assign students to one of six (6) Kansas famous people.

2. Hand out printed information to each small group. Each group receives a different person to study.

3. Students are to read the information about their Kansan. Students then look in the library or classroom books to find additional interesting information about their Kansan. The students are to present the basic information and one other interesting piece of information about their Kansan to the class. The students are to find one item to focus on while making their presentation, e.g. picture, drawing, model, object.

4. The student groups are to spend time deciding who will share what information and how that information is to be shared with the class. Students will have five minutes to do the presentation.

5. Each group will present information to the whole class in the way they have planned. Prior to this time each group has appointed a timer to keep track of the time another group uses while presenting their information.

6. The whole class takes a quiz on the presented information. The quiz consists of two (2) facts about each person to be matched with the individual's name. Students will also write a sentence about one more interesting piece of information that they have heard from the presentations.

FAMOUS KANSANS

Choose the name (or names) that best fits the description. Put the letter on the line.

1._____ A great gunfighter of Kansas cowtowns.

2._____ Born in Atchison, she was the first woman to fly across the Atlantic Ocean.

3._____ Thirty-fourth president of the United States.

4._____ Airplane companies in Wichita.

5._____ Fought against alcohol.

6._____ Hunted buffalo from 1872-1876.

7._____ An Emporian who was editor of the local newspaper.

8._____ Helped national leaders like U.S. presidents make decisions for America.

9._____ Spent many years leading American troops.

10._____ Became lost in the Pacific Ocean during her flight around the world.

11._____ Used a hatchet "to cut out the evil" by smashing saloons.

12._____ Built or piloted airplanes at an early age.

A. Bat Masterson
B. Carry Nation
C. William Allen White
D. Clyde Cessna and Walter Beech
E. Amelia Earhart
F. Dwight Eisenhower

13. Write one other thing that you learned from the presentations.

ACTIVITY FOUR: JELLY MAKING

Initial Setting

Centers are set up around the outside edges of the room on counters, tables, or desks. These centers are the work areas for each table group. Each table area is numbered. The sugar and pectin locations are labeled since these items so closely resemble each other.

Procedure

1. Students are put in groups of 4 (3 may be used).
2. The students then determine how to rotate jobs. Numbering off — 1, 2, 3, and 4 — works well.
3. Students put a number tag tied with a loop of yarn around their necks so that each student easily identifies who is number 1 and so on. Four different colors of yarn should be used so that each number 1, 2, 3, and 4 are also identified by differing colors of yarn.
4. Students whose numbers are called will work on the Jelly Making project. The #1 student from each group will come forward when #1 is called by the teacher. All other students will be working at their desks on other assignments.
5. Students who are numbered "1" come to the sink and measure 1/2 cup of water and put it in a large plastic cup (substitute for bowl). Students check the appropriate box on the Jelly Recipe.
6. Students who are numbered "2" get the cup from the number "1"s and go to the pectin area and measure 2 tablespoons of pectin.
7. Students numbered "2" take the pectin to their assigned work center. Students numbered "3" take a turn to stir well and check the box on the "Jelly Recipe" sheet when finished.
8. In 15 minutes, the students numbered "4" go to the center and stir the mixture and check the box.
9. After another 10 minutes (total of 25 minutes to this point), the "1"s go to stir the mixture again and check the box.
10. After 15 minutes, the "2"s go to stir for the last time and check the box.
11. At the same time as step 10, the "3"s go to the sink area and measure 3 tablespoons of grape juice into a second cup and check the box.

12. The "4"s take the cup of grape juice to the sugar table, add 1/2 cup of sugar. They take the mixture to the center and stir the mixture well and check the box.

13. The "1"s and "2"s get the water and pectin mixture from the center, go to the sugar area and add 1/4 cut plus 3 tablespoons of sugar, check the box, stir the mixture, and check the box.

14. With all the students at their centers, the "3"s pour the juice mixture (purple colored) into the clear pectin mixture. The "4"s stir the combined mixture well and check the box.

15. The "1"s pour an amount of the mixture as evenly as possible into 4 small containers (one for each of the group's members). Clear plastic juice glasses are used.

16. Students cover the mixture with plastic wrap and put a rubber band around the top in order to hold the plastic wrap in place. The mixture is allowed to stand and solidify.

17. The resulting grape jelly could be taken home as a present for a holiday season, used as a breakfast treat on toasted bread, or used as jelly on peanut butter and jelly sandwiches.

JELLY RECIPE

1. Put 1/2 cup water in a bowl ☐
2. SLOWLY add 2 tablespoons powdered pectin, stirring well ☐
3. Let the mixture stand for 45 minutes, stirring 3 times or frequently. ☐ ☐ ☐
4. Put 3 tablespoons frozen grape juice concentrate in a second bowl. ☐
5. Add 1/2 cup sugar. Stir well, but don't expect the sugar to dissolve ☐
6. When the water and pectin mixture is ready, add 1/4 cup plus 3 tablespoons of sugar. ☐
7. Add the juice mixture to the pectin mixture. Stir well until all the sugar dissolves. ☐
8. Pour into 4 small containers. It will be solid within minutes. ☐

FIFTH GRADE

One idea is to have four students actually role-play a group in action for the rest of the class. The various roles of each group member would be defined before and after the role-play. Discussion could also follow about how well each member of the role-play group did their job. This would help students to better understand the jobs (facilitator, recorder, encourager, etc).

My experience with growps suggests that group sizes of four students work out best, at least for my fifth graders.

I probably put the most emphasis on the following idea: when first beginning to incorporate cooperative learning into your classroom, expect plenty of questions from parents, especially if the students haven't been involved with it before. Concerned parents, meaning well, sometimes get things twisted between the school and home with their children as the message carriers. They'll want clarification as far as grading procedures, copying answers, and so on. Be ready and researched for your responses. Perhaps a note home about Cooperative Learning to parents at the beginning of the year would help.

Marilyn Dalton has been a teacher at William Allen White Elementary School for 17 years, where she is presently teaching kindergarten.

Pam Commons taught at Strong City, KS for 10 years (fourth grade for two years and second grade for eight years). This is her second year at William Allen White Elementary School (one year in first grade and this year in third grade).

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Glenda Bair has taught second grade at William Allen White Elementary School for six years.

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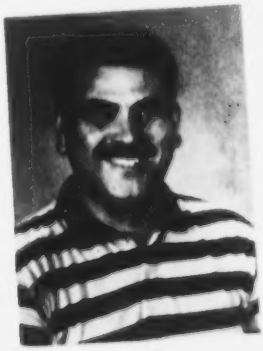

Kim Kirk has taught 13 years at William Allen White Elementary School and is presently teaching fifth grade.

COOPERATIVE LEARNING IN THE MIDDLE SCHOOL SOCIAL STUDIES CLASSROOM

Society changes, students change, and schools must change to allow for the development of thoughtful and caring citizens. This paper explores the condition of students in the classroom, the needs of employers, and the cooperative learning methods which are suited to helping middle school social studies students become productive citizens.

Most of the frustration that one experiences as a teacher centers around the growing apathy exhibited by students. On a recent television program, "The Truth About Teachers," it was reported that 90 percent of American teachers identify apathy as a problem in their classrooms. This seems an especially relevant problem in the Social Studies area. In social studies classrooms, learning centers around teaching students citizenship and the skills needed out in the world and how to act purposefully when carrying out their moral and legal duties. A great deal of effort is also put into seeing that students learn the skills necessary for making wise decisions which take into account the lessons from our past and the visions for our future.

Unfortunately, many students lack visions of what can be and should be. They feel that they have very little control over the world and even less control over their own lives. Apathy becomes the coping mechanism of choice and students lose the desire to fight for control over their lives. The challenge for social studies teachers comes from prodding students out of their apathy while helping them learn that there is satisfaction to be found from facing the events in their lives head on. A democratic nation depends on the active and interested participation of its educated citizens.

Years of hearing —
"Why do we have to learn about dead people?"
"Social Studies (History, etc. . .) is boring." —
at the start of each school year, prompted the search for ways to combat students' negative attitudes towards social studies. Most of their complaints centered around the fact that most traditional teaching methods, especially those at the middle school level and the high school level, involved reading the textbook, memorizing facts, and listening to lectures. In other words, social studies for most students is a passive endeavor where seemingly irrelevant information is thrown out at them. The reality then becomes one where material taught bounces off students or is quickly lost after the test is given.

As a result, it is necessary to structure classrooms where active learning takes place through the development of lessons that come alive for students and demand their active involvement in learning about the past, present, and future and its relationship to students' own lives.

There is a great deal of research and literature on cooperative learning strategies as a means of getting students actively involved in learning. A real plus for cooperative learning is the fact that it is applicable to all school levels and subject matters. A number of studies point out that at the middle school level, cooperative learning may be one of the best strategies for preparing students for later life.

According to Lyman and Foyle (1989), "Cooperative learning should be of particular interest to teachers of middle school children because, in addition to the highly desired outcomes described, cooperative learning promotes student motivation, encourages group processes and positive social and academic interaction among students and rewards successful group participation."

Middle school students at the junction between elementary school and high school are at the point where they are still receptive to social skills training which allows them to learn good communication and teaming skills. These skills are becoming extremely vital to success in the work place of the 1990s and beyond. A recent report from the Carnegie Corporation of New York criticized most middle schools for not helping students to shrive towards vital societal goals. The report recommended that schools:

1. create small learning communities,
2. teach a core academic program including ethics,
3. eliminate tracking and promote cooperative learning, and
4. increase school-based management.

The transitional period covered by middle schools represents a crucial time for helping students to develop into caring and capable individuals. Schools need to recognize this and maximize the potential it represents.

Many of America's large and small businesses are crying out to schools to provide students with the kinds of skills that are critical in a highly technological society. An article in *Education USA* (Oct. 21, 1985), identifies the following attributes as being important for success at work.

1. Employees that are punctual and dependable in getting to work.
2. Employees that listen carefully to instructions and correctly carry them out.
3. Employees who display pride and enthusiasm in doing their work well.
4. Employees who are able to absorb training quickly.
5. Employees who are able to work cooperatively with other people.

Hence, there is very little room in the work place for employees who are apathetic, who lack social skills, or who lack motivation. Estimates are that 90 percent of people who are fired from their jobs are fired because they lack these skills.

Methods for dealing with student motivation and apathy are therefore in great demand today. William Glasser (1986) has reported that 50 percent of all students by eighth grade have "functionally dropped out." There are a growing number of students who take up space in our classrooms, who are capable, yet lack the desire to learn. Glasser goes on to point out that quality education occurs only when:

1. students are involved actively in learning,
2. the relevance of the learning is clear to the student, and
3. thinking skills are taught, promoted, and refined as part of one's study.

Cooperative learning is one method that allows for all three of these requirements to occur. Glasser has developed a control theory that also works well in cooperative learning settings. Control theory emphasizes that to be successful in education, we must teach our children how to take responsibility for their attitudes and actions. Cooperative learning strategies allow teachers to motivate their students to communicate with one another while understanding that each individual has a responsibility to make it work for everyone else. This kind of cooperation and understanding is vital to a democratic society. Social studies is one arena in school which must help young people develop and accept the kinds of responsible actions that lead to good citizenship.

History provides excellent examples for the power of good teams. The cooperative teams that have succeeded in history have done so because they have understood clearly the power of a number of people working together to achieve the same goal over the failures of groups who lose sight of the power of shared goals and fall into anarchy. Men and women would not have made

the westward trip without the help of their friends and neighbors. Space exploration would still be a dream without the cooperation between many fields of endeavor. A highly relevant example of this, that we could use with our students, is that of any successful rock band. Without the cooperation and talents of every member, these bands would not be successful. Social studies educators have a perfect subject matter for teaching these lessons of cooperation to our students because in many ways, the study of history is one of how cooperation or the lack of cooperation that has either created strong nations or toppled weak ones. Examples from history provide students with vital information regarding the value of cooperation. This is not to say that each individual's effort is not important, but that their effort multiplies when it is related to goals that a group of students share.

Research shows that cooperative learning creates increased mastery of skills and concepts, higher retention of information, increased transfer of knowledge, and increased usage of higher level thinking skills and problem-solving skills. Cooperative learning also promotes healthy social skills development and higher self-esteem. There is also a growing amount of evidence to show that cooperative learning reduces prejudice and helps students learn to respect the rights of others. Because of these findings, it is difficult to ignore the impact that cooperative learning can have in reducing student apathy in the classroom and increasing student motivation.

When beginning with cooperative learning, it is important to keep in mind that to be successful, cooperative learning must be highly structured, carefully planned, and carefully monitored. Students must also recognize the importance of the group goal and that each student will be held individually accountable for the learning that takes place in the group. It takes time to teach students how to work together. They have had a lifetime of dealing with a mostly competitive system and it takes patience and time to show them the benefits of a cooperative system.

Simple cooperative methods work best when starting out. Strategies like Frank Lyman's (Univ. of Maryland) Think-Pair-Share are ideally suited to easing students into new learning environments that require cooperation. In this method, students think of their own responses to a question or idea and then after an appropriate length of time they share their responses with a partner. The partners then discuss their responses and develop one that they will share with the class as a whole. This method is an excellent warm-up activity to get students thinking about the lesson at hand.

Another good source for cooperative learning is David Johnson's *Circles of Learning* (1984), which outlines all aspects of implementing cooperative learning activities in the classroom. Detail is given as to how to structure groups, the necessary ingredients of a cooperative activity, group processing, social skills development, and group evaluation.

Robert Slavin's (1986) manual on Using Student Team Learning also provides a wealth of information on structuring team activities. The manual outlines STAD (Student-Teams-Achievement-Divisions), TGT (Teams-Game-Tournaments), and Jigsaw. The manual uses clear examples of these methods and provides a great deal of guidance as to how to measure student achievement and improvement over the course of a school year as a result of the team-learning approach.

All of these strategies can be adapted easily to any subject matter and grade level. They can also be combined to develop an even wider range of possibilities for use in the classroom. It is exciting to see students, who have not been actively involved in class, get involved and active as a result of cooperative learning strategies. It is amazing to see how quickly a large number of students can get on task and stay on task as a result of methods that allow students to develop and refine their own personal skills. Students quickly develop a sense of power over their lives and are forced to stretch the limits of their critical thinking skills. Most importantly, students gain experience in collaborative learning which is necessary for the development of future work related skills. All of this makes learning and evaluation more effective and productive for both students and teachers.

Cooperative learning strategies create a climate where all students are expected to work together to reach a common goal. This allows students practice in participatory democracy, the opportunity to practice independence in a supportive environment, and practice in communication skills that are vital in all segments of life. Social studies classrooms that use cooperative learning can become mini-labs where students actively experience history by doing rather than by listening. Hopefully, this will help to develop a generation of young people who actively engage in our democratic society and desire the best for themselves and others. Whether it be a social studies classroom or an art classroom, all students benefit from cooperative strategies.

ACTIVITY ONE: BRAINWRITING ACTIVITY

In the first space provided below, answer the following question. When you are finished with your answer, exchange papers with a group member and respond to his/her answer. Exchange a third and final time.

Question: If you were given two hours to talk with Thomas Jefferson or Benjamin Franklin, explain how you think they would define freedom as it relates to the colonists' position during the Revolutionary War?

Write short, specific answers.

ACTIVITY TWO: TGT ACTIVITY
CURRENT EVENTS—Sept. 18, 1989

1. The international symbol of communism is the _____ and the sickle.

2. Robert Penn Warren died last week. He was the United States' first:
   a. Surgeon General
   b. Poet Laureate
   c. Roving Ambassador

3. James Warden drove from Los Angeles to Washington in a car featuring panels and what kind of power?

4. There have been talks in the last year about East German and West German:
   a. Reunification
   b. Civil War
   c. Doctor Exchanges

5. Which is a major city in East Germany?
   a. Frankfort
   b. Leipzig
   c. Munich

6. Thousands of East Germans fled to West Germany by going through Hungary and what German-speaking country?

7. What city is the capital of West Germany?

8. Wichita's YWCA will lose its funding after 1991 or 1992 from the _____ _____.

9. Erik _____, formerly a Wichita Wing, will be playing in his native Denmark this year.

10. Amnesty means that the government has the authority to _____.

11. Amoral means to lack _____ sensibility. Infants are amoral.

12. A state of lawlessness or political disorder due to the absence of government authority is called: _____.

13. One from whom a person is descended is known as their _____.

14. Pres. Bush said last week that ownership of assault weapons should:
    a. be banned.
    b. not be banned.
    c. be taxed.

15. The head of the Anglican Church in South Africa is Archbishop Desmond _____.

16. Coleman Young was the top vote-getter in a primary election last week. He's mayor of what city?

17. Defeated in a primary election last week was New York Mayor Ed _____.

18. What is the name of the building that is the headquarters of the U.S. Defense Department?

19. The Soviet government headquarters is the:
    a. Pravda
    b. Kremlin
    c. Dacha

20. If you're in the black, you're:
    a. making money.
    b. losing money.
    c. breaking even.

21. Which spelling is correct?
    a. Parralel
    b. Parallel
    c. Paralell

22. In a test last week, many adults misspelled this word. Which is correct?
    a. Pennitentiary
    b. Penatentiary
    c. Penitentiary

23. In college football, Number 1 ranked Notre Dame beat what team, which was ranked Number 2?

24. Francis (Fay) Vincent was named commissioner of what sport?

25. The head football coach at the University of Notre Dame is Lou _____.

ACTIVITY TWO: ANSWER SHEET

1. hammer
2. b. Poet Laureate
3. solar
4. a. reunification
5. b. Leipzig
6. Austria
7. Bonn
8. United Way
9. Rasmussen
10. pardon
11. moral
12. anarchy
13. ancestor
14. b. not be banned
15. Tutu
16. Detroit
17. Koch
18. The Pentagon
19. b. Kremlin
20. a. making money
21. b. parallel
22. c. Penitentiary
23. Michigan
24. Baseball
25. Holtz

ACTIVITY THREE

RECONSTRUCTION AFTER THE CIVIL WAR

In teams of three, you will use the scientific method to examine a hypothetical question about history. Your examination will include developing at least four theories that solve the hypothetical question. Once you have developed your theories, you will then test the probability of their happening according to your predictions. Your team must then make a conclusion as to which of your theories would have been most likely.

Guidelines:

1. Each team has an encourager, a recorder and an interpreter
   - the encourager will praise team members for positive contributions to the project and will encourage equal involvement of all team members.
   - the recorder will write down the thoughts and ideas of the team.
   - the interpreter will help all team members understand difficult material and ideas in a positive and caring manner.

   You will be able to determine within your team who will take on each of these roles. Everyone has to take on the responsibility of a role.

2. Communication within the team is crucial. Each member of the team must be allowed and encouraged to contribute equally to the task.

3. Use your textbook, the article, and any other appropriate resource materials available in the classroom.

4. Grading:

   Team theory sheet 20 pt.
   Essay (1 per team) 60 pt.
   (6 paragraph essay!! Introduction,
   4 supporting paragraphs, and a conclusion)
   Individual Quiz 40 pt.

(Remember to follow all the normal rules that apply to essay writing.)

5. The team must choose one of the two following questions to examine in detail. (Everyone in the team must agree to the question chosen.)
   a. What would have happened if the South had won the war?
   b. What would have happened if Lincoln had not been assassinated?

6. Remember your team members can prove to be an invaluable resource. Everyone has creative ideas that can help the team develop many theories. Value each other's input and remember that good communication also involves listening to one another.

Your team will be observed each day by the teacher, who will note whether or not all members of the team are participating. Teams that participate well together and involve each member on an equal basis will be awarded a free homework slip at the end of the project.

ACTIVITY THREE: WORKSHEET

Reconstruction After the Civil War Theory

GROUP MEMBERS

_____ROLE_____

_____ROLE_____

_____ROLE_____

QUESTION CHOSEN:_____

THEORY ONE:

PROOF:

THEORY TWO:

PROOF:

THEORY THREE:

PROOF:

THEORY FOUR:

PROOF:

CONCLUSION (WHICH THEORY HAS THE MOST EVIDENCE TO SUPPORT IT?)

(Theories must be developed prior to finding proof. Show worksheet to teacher prior to finding this proof to gain written approval to continue with the project.)

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Darla Smith has taught for five years in the Winfield, Kansas school system. She has experience teaching at both the highschool and middle school levels and is currently teaching Social Studies at Winfield Middle School. Darla received a B.A. degree in Psychology, a B.S. degree in Education and a M.S. in Counseling from the University of Kansas. She has taught several courses for Wichita State University on cooperative learning and effective teaching strategies.

TEAMWORK CAN MAKE IT HAPPEN IN EIGHTH-GRADE MATHEMATICS

I have had the slogan "TEAMWORK CAN MAKE IT HAPPEN" on my wall for the past couple of years. This year I asked my eighth graders to help me out a little with my presentation. They have already completed a full year of teamwork in math. I asked them to tell me what the slogan means to them so that I could share their ideas with you. Some of the explanations I received were:

It makes you enjoy math more!
I have more confidence in math class!
Teamwork allows togetherness!
We get better grades!
We get to share the load on long assignments!
Teamwork brings rewards for us!

These are just a few of the many positive responses I received.

As a teacher, I see many other things that teamwork can make happen. On a team, everyone participates. It is so much easier to make this happen in cooperative learning. I use a variety of little gimmicks that encourage the quiet, shy students or the low motivated students to share.

There is also more success for the low achievers. This has been pointed out time and time again, but it is so true. With team learning math anxiety is lessened considerably. The students do not give up so easily. Students provide peer tutoring and give immediate feedback for each other. Slower students can enjoy competitions as a part of a team. Time on task increases tremendously.

I spend the first week of school teaching cooperative learning to my classes. I found that this saves me lots of time later. We work through many group builders to develop the collaborative skills they need to succeed as a team. Throughout the week, I teach a basic overview of how STAD, TGT, and Jigsaw works. I do a Jigsaw activity that actually teaches these methods to the students. In the Jigsaw activity, the learning together roles are also defined. After going through this activity, the students complete a worksheet as a team. It is stressed that their work is not complete until everyone knows the worksheet. As a final activity for the week, the students are given a quiz. It is at this time that the students can see how the improvement points are calculated. Other activities for the week include a team worksheet dealing

with how to make learning easier and a TGT tournament using football helmets or baseball caps.

As for team organization, I mainly use STAD as explained in Robert Slavins' book, *Student Team Learning*. I incorporate TGT tournaments into daily assignments from time to time for fun. The students enjoy the competition and consider it a game day. Jigsaw sometimes works well with the Scholastic MATH Magazine. It can also be effective to break up long assignments.

Johnson and Johnson's learning together roles help to add structure to the groups. I use the chart that follows to assign daily roles. Everyone sits on the same side of the table each day. I rotate the chart daily to change roles. If a person is missing, the encourager takes the job of the missing person. Seventh and eighth graders respond well to the roles. I think it gives them a way to really be cooperative and not seem uncool about it.

Appropriate rewards can add to the effectiveness of working in teams. I take pictures of the SUPERTEAMS and put them up on the "Math Wall of Fame". I can tell that the students like this because they always remind me if I forget to take their picture. At the end of the year, I put all the pictures of the SUPERTEAMS together and make a poster. The poster will hang on my wall in future years.

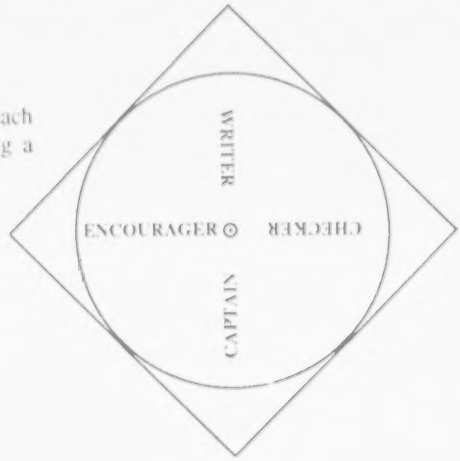
Another motivational strategy I use is free time coupons. The criteria for earning a coupon varies from time to time and class to class, depending on the situation. A coupon is not easy to earn and requires cooperation of the entire team. Some of the criteria I have used are: 1) a coupon for any team scoring all 30's in STAD, 2) a coupon for any team that all of its members scores 80% or better on a test. An extension of this is, that if the entire class scores 80% or better, the class earns a "game day".

As an evaluation of how the teams are working I use a survey at the end of the first quarter. The survey has been very helpful to me in making adjustments. On the survey, I ask the students to list three people they feel they would work with best on a team. If possible, I try to place each student with one of their choices. I also ask them to list three people with who they could not work well. I try even harder to place them with one of these. Usually they find out that they can work together after all.

There are many problems that can arise from using cooperative learning. A teacher is challenged to be resourceful and creative in troubleshooting. It also requires energy and enthusiasm on the part of the teacher.

I am very excited about the results I have seen with cooperative learning in my classroom. Higher math achievement is not the only positive outcome. Increased student cooperation and respect is evident. Students realize that they can work with many different types of people. Many times this can be much more gratifying to witness than academic achievement.Figure of NWSE graphic here.

The circle rotates so that each day the roles are pointing a different direction.



Toni Bowling, U.S.D. #244, Burlington, Kansas, is an eighth-grade mathematics teacher. She has developed a booklet of materials called "Teamwork for Success in Math."

STAD:
STUDENT TEAMS — ACHIEVEMENT DIVISION

MAIN IDEA: Heterogeneous student teams work together to learn subject matter. Students are given individual quizzes and their scores are compared to their own past test score averages. Team points are awarded based on individual improvement.

ASSIGNING STUDENTS TO TEAMS: A team in STAD is a group of two, three, four or five students who represent a cross-section of the class in past performance, race or ethnicity, and sex. That is, a four-person team in a class that is one-half male, one-half female, three-fourths white, and one-fourth minority might have two boys and two girls and three white students and one minority student. The team would also have a high performer, a low performer, and two average performers. A two-person team would consist of a high and a low member or an average and an average member.

DETERMINING INITIAL BASE SCORES: Base scores represent students' average scores on past quizzes. If you are starting STAD after you have given three or more quizzes, use students' average quiz scores as base scores for each subject. Otherwise, use students' final grades from the previous year. Base scores are refigured after three grades.

INTRODUCTION OF MATERIALS: The teacher presents the lesson using his/her own style and materials.

TEAM STUDY: The teams then work together to master the lesson. This study time is most effective if guided by the teacher through the use of worksheets or problems. The teacher should also assign a job for each team member to facilitate teamwork. For example, a student who is not participating and is easily off task should be given a job that will keep them busy, like Recorder.

TESTING: After several periods of presentation and team study, students take individual quizzes over the lesson.

INDIVIDUAL IMPROVEMENT SCORES: Equal opportunity for success is achieved by comparing a student's score to their own past averages, or base score. Students score points for their teams by performing above their base scores or by getting a perfect paper.

IMPROVEMENT POINTS:

0 —more than 10 points below the base score

10 —10 points below to 1 point below the base score

20 —base score to 10 points above the base score

30 —more than 10 points above the base score is a perfect paper

TEAM RECOGNITION:

The team score is an average of the points of the individual students on the team.

GOOD TEAM	15 points
GREAT TEAM	20 points
SUPER TEAM	25 points

All teams can earn awards; teams are not in competition with each other. If students want to earn team recognition, they must encourage and help their teammates to learn the lesson.

STAD can be adapted for use in every subject and has been used from grade two through college. It is most successful for teaching well-defined objectives with single right answers.

Adapted from *Using student team learning*. The Johns Hopkins Learning Project by Robert E. Slavin.

For more information on training materials or research on Student Team Learning please contact:

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TAI MATH

Team Accelerated Instruction (TAI) Mathematics is a cooperative learning method for grades three through six or until the student is ready for a pre-algebra class. It was developed by Robert E. Slavin, Marshall Leavey and Nancy A. Madden reseachers from The Center for Research on Elementary and Middle Schools at The Johns Hopkins University, Baltimore, Maryland.

Student materials consist of thirteen Student Skill Books ranging from Advanced Addition to Pre-Algebra. Students are placed in the appropriate book as indicated on a placement test. Instruction is matched to the students current achievement level.

Students work in heterogeneous three- to four-member teams. Each student follows the structured practice and concept application of the Student Skill Book. Several times a week the teacher provides instruction in small groups to those students practicing the same skills. Students check one anothers' practice problems and help each other to master the skills. When the students have finished the structured practice of a unit they then take a formative test. If a student achieves 80 percent or better on the formative test, the student is ready for a unit test. Individual accountability becomes part of the process as the student must achieve mastery on the unit test without the team members assistance. If the unit test indicates mastery of the concept, the student progresses to the next unit.

The homework for the TAI program consists of ten problems, four nights a week. Home work problems review concepts learned in previous units and include two word problems. Students review math facts by taking time tests at regular intervals. Students score team points for their teams by completing units, homework and passing facts tests. Weekly recognition of those teams that are moving quickly and accurately through the series is an important part of the motivation process.

The teacher is assisted each day by student monitors who are responsible for grading unit tests and home work. The monitors give out unit tests and post student progress. Each student in the class has an opportunity to be a monitor.

Research studies in urban, suburban and rural school districts show a two to one ratio in achievement gains over other math classes. The students enjoy math, feel successful and make new friends. TAI is eligible for dissemination through the National Diffusion Network, because TAI has been validated by

the Department of Education's Joint Dissemination Review Panel, which certifies the educational and statistical significance of innovative programs.

TAI Math is being used in the Junction City Schools in selected classes grades three through seven. For information about TAI, contact: The Johns Hopkins Team Learning Project, Center for Research on Elementary and Middle Schools, Johns Hopkins University, 3503 North Charles Street, Baltimore, Maryland 21218.

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SCIENCE INVESTIGATION THROUGH COOPERATIVE LEARNING

Background Rationale

There is renewed interest in the integration of curriculum, which we support. Science and language arts provide the optimal opportunity for involving students in investigation and at the same time, practicing the use of writing as a tool for learning. These writing strategies can be used in other content areas and in science investigation projects.

Language arts involves the communication skills which must be practiced in real situations for real purposes. Kids learn to talk by talking/learn to write by writing in an "Interactive" environment. Research skills must be learned through actual data collection. There are several writing strategies which can be helpful to students involved in investigation projects of real interest to them.

The ideas we are excited about are not only the final results of this project, but rather what we found out about cooperative grouping, and the writing strategies students learned to use as tools for investigation. Collaboration makes demands on the learner: the sharing of ideas, verification of findings from independent investigation, group decision making in reaching synthesis. In addition, we support teacher team planning. Collaboration by teachers is equally powerful in creating a more integrated approach to learning.

We hope a step-by-step review of what we did and the sharing of some samples of student individual and group work will capture some of the enthusiasm we feel for this model. The model could be applied to other content units of study.

MAJOR GOALS:

1. to encourage active involvement in learning by all students.
2. to provide the opportunity for students to work together in heterogeneous groups.
3. to allow students to control their own learning with the assistance of structured guidelines.
4. to teach specific strategies useful in data collection and reporting which can be applied to other research projects.

5. to offer students choices for research projects within a unit topic.
6. to involve students in gathering content information from sources other than the science textbook, namely, through library sources and primary source interview.
7. to involve cooperative groups in planning and presenting a summary of their findings to an audience in a format of their choice.

STEP-BY-STEP UNIT PLAN

Topic: Inventions

(model can be used for other contents and unit topics)

Project topic: Students had just completed a unit from the adopted curriculum on simple machines. The investigation of "inventions" was an enrichment unit developed by a team: classroom science teacher, university methods instructor, school librarian and gifted consultant.

(* indicates student samples and/or teacher lists or models attached)

1. Planning meeting of teacher team
2. Teacher and librarian collect resource materials for unit resource library
3. Introduction of unit to students:

Set Induction: Reading and discussion of short story, "Marionettes Incorporated" from *The illustrated man*, Ray Bradbury. (librarian)

goal: to introduce some of the possible problems involved with invention

* 4. Assignment of cooperative groups to include various abilities and to avoid social problems within the groups (teacher team)

* 5. Introduction of strategy:

Semantic Mapping (university instructor)

goal: to determine background knowledge of unit content
to teach students how to generate sub-topics within a unit topic

6. Cooperative group meeting

goal: to generate sub-topics for the unit, Inventions, and to rank preferences for investigation

* 7. Assign sub-topics to groups based on preference (science teacher/ university instructor)

* 8. Introduce strategy: Learning Log (university instructor)

goal: to share a tool for independent recording of information gathered
to synthesize information gathered from readings/interviews

9. Introduce strategy: Focus Questions (university instructor)

goal: to share a tool for helping students focus their investigations on specific questions of inquiry

*10. Cooperative group meeting

goal: to determine focus questions within their selected sub-topic for group investigation

*11. Introduce record keeping and rules: (science teacher)

goal: to assist groups in using meeting time productively
to assist groups in planning
to assist teacher in monitoring group and individual progress

12. Seek field visits and resource persons to be interviewed by each cooperative group (science teacher and gifted consultant)

13. Investigation Time Block

goal: to provide time for independent reading and data collection
to provide time for cooperative group meetings
to collaborate on information gathered concerning focus questions
(during this time, students kept individual learning logs, cooperative group meeting records)

14. Primary Source Data Collection

goal: to involve students with primary source investigation
to add to or question information gathered on focus questions
(each group visited either a site or with an invited guest at school, an individual with special interest/expertise in their sub-topic)

15. Cooperative Group Meeting

goal: to share individual findings from summary of interview

* 16. Cooperative Group Meeting

goal: to decide on format for presentation of findings
to determine content for presentation to plan presentation

17. Cooperative Group Meetings

goal: to prepare presentation

***Teacher Record Keeping**

Teacher record keeping was ongoing and both individual and group. A record sheet was designed for the investigation project, appropriate to the types of strategies taught and the productivity of the cooperative groups.

Culminating Activity

Each group gave a presentation to the entire class. The responsibility of the group was to share, in a format of their choice, approved by the teacher, the summarized findings of their group. Focus questions guided the content of presentations.

Class Evaluation

The entire class was involved in an evaluative discussion following all the presentations. Discussion centered around the presentations and on attitudes/results of working in cooperative groups. Students shared feelings about the strategies used to gather data and whether they would like to work in a cooperative group structure for another science unit.

Classroom visit

Videotaped cuts from different sessions of the project.

TEACHER TEAM CONCLUSIONS

This was our third experience with this model of cooperative learning. We have sometimes introduced other strategies for data collection, e.g. data charts, and have modified some of the steps in this model. Will we use it again? A resounding YES!

We believe this model teaches more than science content. Our most important goal is to teach students some strategies which help them LEARN HOW TO LEARN!

Science must involve REAL investigation. Language Arts must involve using language TOOLS to gather and share information with a real audience. Writing as we learn and collaboration with peers are powerful aids to learning.

Our previous unit for investigation was the study of energy. Our next may be current events related to science. Cooperative group investigation works for us with many benefits for students.

We agree on these results:

for students:

1. high student motivation
2. high participation level by most students
3. assumption of leadership roles by some students
4. group collaboration in comparison of data/decision making
5. application of some effective strategies for carrying out research/investigation
6. assumption of responsibility by students
7. use of creative formats for sharing of findings
8. positive attitude by students toward this kind of learning

for teachers:

1. opportunity for teacher team planning
2. opportunity for teacher to function as a facilitator for learning
3. opportunity for use of individual teacher talent and expertise

GROUPING FOR INVENTION PROJECT

High	High-Average	Low-Average	Low
Kelly B	Ethan B	Grant B	Donnell C
Zac C	Stacy G	Will P	Carrie T
Casey L	Kerry B	Seth R	Jessie H
Tom T	Robyn A	Rob H	Amy M
Brlan T	Mlcah H	Alison D	Cherl S
Shane W	Corey K	Alison F	Paula S
Becca B	Andrew H		Andy K

Group A	Group B	Group C	Group D
Kelly B	Zac	Casey	Tom
Ethan B	Stacy G	Kerry B	Robyn A
Seth R	Will P	Grant B	Rob H
	Donnell	Carrie T	Amy M

Group E	Group F	Group G
Brlan T	Shane	Becca
Corey K	Andrew H	Micah
Alison D	Alison F	Andy K
Jessie H	Cheri S	Paula S

* Heterogeneous groups were determined subjectively using input from all Level V teachers.

** In determining groups, consideration was also given as to the dynamics in an attempt to make sure that the students in each group could work well together.

LESSON PLAN

Unit: Inventions

Goal: to introduce the semantic map as a strategy for choosing focus research questions.

Terms: semantic map
research/investigate
strategy
topic/sub-topic
collaboration

Set Induction: Tell about how the semantic map can show what we know about a topic.

ACTIVITY I: Demonstrate through the development of a collaborative semantic map using a current event: the Alaska Oil Spill.

ACTIVITY II: Begin a collaborative semantic map using topic for study: Invention.

ACTIVITY III: Cooperative group workshop: Extend semantic map to add categories/subtopics and include questions we want to know.

Ask each group to select three sub-topics they would most like to investigate (group is to include questions for investigation)

Closure: Review what is to be included on each group workshop sheet. Ask review questions:

1. Tell me one reason the brain should be considered "Amazing"?
2. What is a semantic map?
3. How can the use of this strategy (semantic map), help us in our research

SEMANTIC MAP and questions for investigation:

Choices for research/investigation:

#1. _____
questions for investigation:

#2._____
questions for investigation:

#3._____
questions for investigation:

- needed inventions
  what will we need in the future
- inventors
  who are some inventors
- kinds of inventions

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TOPICS ASSIGNED TO COOPERATIVE GROUPS

(based on sub-topics and preferences generated by cooperative group use of semantic map)

Groups:

1. Most Important Inventions
2. Medical Breakthroughs
3. Patents
4. Famous Inventors and Inventions

5/6. Inventions by Local Inventors

7/8. Strange Inventions

9. How Inventions Change Over Time
10. Research and Development of an Invention
11. Advertising of Inventions
12. A Featured Famous Inventor

RULES FOR INVENTION PROJECTS

Every member of the group will:

1. share in the responsibility for being a leader.
2. contribute to the over-all project of the group.
3. agree on a list of objectives and facts which will be taught in the presentation.
4. complete focus question cards and learning log.
5. be responsible for every other member of the group learning the basic objectives and facts.

Each group will be responsible for summarizing their research findings and sharing with classmates.

COOPERATIVE GROUP EVALUATION

What did your group do during today's workshop?

Did each member contribute ideas?

Did your group complete the task assigned?

Who was the recorder for your group today?

Are there any assignments for members of your group?

Issues for teacher consideration:

Group members:

PRESENTATIONS BY COOPERATIVE GROUPS

Groups/Format of Presentation: (proposed by group/approved by teacher)

1. Most Important Inventions

   Interviewed other grade levels of kids for opinions as to the most important inventions. Graphed data collected.

2. Medical Breakthroughs

   Presented a chart of historical changes in medical inventions. Shared parts of videotape taken during interview at Lawrence Memorial Hospital.

3. Patents

   Invented a product (a new drink). Simulation of trip to Washington, D.C. to Patent Office.

4. Famous Inventors and Inventions

   Created a picture quiz of identification of inventors and their invention. Conducted a survey of quiz. Shared results.

5. Inventions by Local Inventors

   Shared drawings and charts explaining invention of machine to detect visual problems in babies. Shared videotape of interview with the inventor.

6. Inventions by Local Inventors

   Shared illustrations and parts of interview with inventor of special stereo speakers nationally marketed.

7. Strange Inventions

   Simulation interview with authority on strangest inventions.

8. Strange Inventions

   Created a survey asking people to rank wacky inventions from their selected choices.

9. How Inventions Change Over Time

   Creative drama presentation of the development of selected inventions (e.g. the wheel, the camera).

10. Research and Development of an Invention

    Scroll type T.V. presentation of an invention from the idea to the securing of a patent.

11. Advertising of Inventions

    Analyzed T.V., magazine and newspaper advertisements to determine the most advertised inventions.

12. A Featured Famous Inventor

    Simulation of a radio program about Alexander Graham Bell.

Unit: Inventions **Student** _____

Group Topic:_____

Evaluation: (Check-list/Anecdotal)

Individual:

Learning Log:
(Entry Dates)

comments: (synthesis, noted major ideas, entries from readings and group meeting)

Focus Question Cards:

comments: (kept focus, synthesized information, selected appropriate sources)

Cooperative Group:

Group Meetings:
(Meeting Dates)

comments: (prepared for group meetings, contributed ideas, shared responsibility, listened to others, on task)

Group Project: _____
(Type of Project)

comments: (quality of presentation, covered topic, shared responsibility)

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For more information about student work, contact the authors listed below:

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Thomas Christie has been teaching intermediate students at Deerfield Elementary School in Lawrence, Kansas for fourteen years. Since the departmentalization of the school's curriculum, he has taught science. Christie received his B.A. in Elementary Education, 1974, an M.A. in Curriculum and Instruction, 1980, and an Ed.D. in Educational Policy and Administration, 1989, from the University of Kansas.

Christie co-authored an instructional book for Good Apple, Inc., and does frequent free-lance writing for several educational magazines.

Flora Wyatt

Thomas Christie

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COLLABORATION IN THE STUDY OF A NOVEL

As I attended cooperative learning workshops, I noticed that most of the material was designed for elementary students and dealt with knowledge that could be objectively measured. I adapted some of these new techniques in my English classes for vocabulary, grammar, reading comprehension, and writing peer groups. These strategies resulted in improved communication skills, and the students appreciated the change of pace.

But I wanted more: creativity, critical thinking, and a tolerance for different interpretations in the study of literature. In addition, I wanted fluidity, the ability of students to shift smoothly from working in pairs, to small groups, to a whole-class collaborative group — whatever would produce the best results. Finally, I wanted the students to be accountable, both as individuals and as groups, for their performances.

Such goals are not so much "measured" as they are observed, and I am happy to report that I have witnessed exciting displays of progress in each area.

Creativity

Small groups produced videotapes dramatizing a review of an autobiography's literary elements — people (characters), places and times (setting), key events (plot), structure (chronological or episodic), and values (theme).

Critical Thinking and Tolerance for Ideas

In group discussion, the words "right" and "wrong" were replaced by the words "reasons" and "evidence." Students would turn to passages and read to others to support their interpretations. Some changed their positions in light of new evidence, and some noticed that the same evidence could result in different interpretations.

Fluidity

Aside from taking leadership roles in small groups, students gradually took my place as discussion leader during whole-class discussions. At first they were appointed, and then they started asking for the job. The shifting from pairs, to small, to whole-group activities became noticeably faster, smoother, and more natural.

Accountability

Leading class discussions and recording performances on the tape recorder or with a video camera put both individuals and groups in the spotlight in a special way because the whole class depended on their presentations for needed information. If one slacked off, group members reported it to me and would often fill in the anticipated gaps, and so they liked the item on the evaluations asking if each member "worked until the task was done." Peer pressure took on a new, academic meaning in classes that produced some positive lessons in social responsibility. The grade, by the way, was divided between assessing the whole-group product and individual performances. Students were required to turn in both individual and group notes which documented their work on the project. An unexpected outcome was that students dressed more formally on presentation days, signaling a personal pride in what they were doing.

Thrilling evidence that students had indeed taken more responsibility for their own and each other's learning occurred in my IB 11 English class. I had been delayed by another school responsibility and had arrived twenty minutes late, only to discover that the students had appointed a discussion leader and were zestfully pursing the issues raised by their reading. Overcome with initial shock, which quickly translated into pride in my students, I sat down and OBSERVED collaboration at its best.

These positive experiences have spurred me to venture into other lesson plans that experiment with collaboration, such as these based on Alexander Solzhenitsyn's, *One Day in the Life of Ivan Denisovich*. Such lessons are designed to encourage creativity, critical thinking and tolerance for diverse ideas, social fluidity, and accountability.

COOPERATIVE LESSON PLAN

by Patsy Kile

UNIT 1— LESSON 1: ***One Day in the Life of Ivan Denisovich***
by Alexander Solzhenitsyn

Time Allotment: Two days

Objectives:

1. To establish a basis for understanding that various types of art share common elements by identifying them in the novel's cover picture.
2. To practice and assess small group roles.

Background:

Students are presently reading and responding to the novel in their journals by recording information from the novel, along with their questions, ideas, feelings, and speculations (sample entry appears on the next page).

Materials:

1984 Bantam edition of the novel
Teacher's lecture notes
Group Worksheets
Group Role Evaluation Sheets
Homework—Lesson 2 Worksheet

LESSON OUTLINE

Day 1: The teacher will
1) explain purpose and dynamics of small groups;
2) lecture on the elements of art;
3) randomly divide class into groups which will then meet to select a group name, assign roles, and record this information on the worksheets to be used tomorrow.

Day 2: The students will
1) discuss and record group answers to the assignment sheet questions;
2) listen to the verbal reports of each group's answers to the whole class;
3) verbally identify examples of their role performances to be recorded on their group evaluation sheets;
4) turn in the group worksheets;

5) receive the two-part homework assignment:
   a) In your class journal, give a summary of and response to the topic, "Two Days in the Life of a Small Group Member," and
   b) Answer the questions and follow the suggestions for your reading journal as directed on Lesson 2 Worksheet.

Olivia Bartel
Mrs. Kile
Hour 4 IB
Sept 1, 1989

Solzhenitsyn: Day in the Life

Response: pp. 76-

Facts.

Record said Shukhov was in for treason; not true

No one escaped although tried

Squealers killed by prisoners

People who helped cook do menial jobs got extra food taken from prisoners

Captain - new to camp, was naval officer, liked to explain things

Caesar thought it beneath him to come to mess hall

Offices were heated; cold where prisoners were

Response

Feeling that if you didn't agree with govt you died

Most seem to be in because what they tried to do for their country failed

Everyone for themselves but sharing was necessary

Gangs had their "pets" and important people

Stealing normal way of life

Certain prisoners got privileges

Caesar, K-123, Captain stick together because of common interests

LESSON 1

Group Name:_____

Facilitator:_____Recorder:_____

Task-Minder:_____Reporter:_____

LESSON 1 - ELEMENTS OF ART ASSIGNMENT SHEET

DIRECTIONS: Study the cover picture on *One Day in the Life of Ivan Denisovich* and answer the following questions about the six elements of art present in the painting.

1. What is the subject of the picture? What do you see portrayed?

   _____

   _____

2. What media do you suppose was used to create the original picture for this cover? oil? Pencil? Water color? etc. Why do you think so?

   _____

   _____

3. What is the background for the figures in the picture? Can you identify a particular place, time, or condition surrounding them? What clues did you use in deciding on your answer?

   _____

   _____

   _____

   _____

4. What does the picture make you feel emotionally? What does it make you think about? What in the picture creates that feeling or thought?

   _____

   _____

   _____

   _____

5. How would you describe the way the artist portrays the subject? Is it like a photograph that captures reality, or more of an expression of how the artist feels, or more like a quick glance or passing impression? What about the picture makes you choose your answer?

6. What are the parts of this picture? Consider the figures: How many are there? How are they arranged? What about light and shadow? Lines? Color? Compare the two different copies of the book. How does the paperback differ from the hardbound? What is the effect of the different colors of the books and their intensity? How do all these parts work together to form the whole picture?

EVALUATION OF GROUP ROLES

GROUP NAME:_____

DIRECTIONS: Each group member will orally identify examples that show these role performances by other members of the group. One may cite examples for him or herself if others cannot. All must agree on each example's accuracy before the Task-Minder writes it on this sheet. If no example can be identified, N/A should be written in the blank.

FACILITATOR: _____

1. Produced ideas: _____
2. Clarified task & ideas: _____
3. Listened actively: _____
4. Kept group producing: _____

RECORDER: _____

1. Produced ideas: _____
2. Clarified task & ideas: _____
3. Listened actively: _____
4. Recorded accurately: _____

TASK-MINDER: _____

1. Produced ideas: _____
2. Clarified task & ideas: _____
3. Listened actively: _____
4. Watched time: _____
5. Transcribed role examples accurately: _____

_____

REPORTER: _____

1. Produced ideas: _____
2. Clarified task & ideas: _____
3. Listened actively: _____
4. Presented accurately to class: _____

LESSON 2

Name: _____

Teacher: _____

Class: _____

Date: _____

Unit 1 - Lesson 2: Identifying the Elements of Art in *One Day in the Life of Ivan Denisovich*

Objectives:

1. To identify the six elements of art paralleling those found in the novel's cover.
2. To practice and assess roles within a small group.

Directions: Skim through the novel and answer the questions below.

1. What is the subject of the novel? What is the story about?

_____

_____

2. What in the novel could you equate with the media used in a painting? The genre itself? The story-telling method? The words themselves?

_____

_____

_____

_____

3. What is the background for the action and characters? Can you identify a particular place, time, or condition surrounding them? What clues did you use in deciding on your answer?

_____

_____

_____

_____

4. How does the novel impress you emotionally? What does it make you think about? What in the novel brings forth these feelings or ideas?

5. How would you describe the way the writer tells the story? Does he show the real world? Does he create an imaginary world? Is the novel mainly an expression of the writer's feelings? What about the novel makes you choose your answer?

6. As you continue reading the novel and writing in your journal, note how the parts of the novel — plot, character, setting, point of view, and language work together to express the message or theme.

Patsy Kile currently teaches sophomores in English and juniors in the International Baccalaureate Program at Sumner Academy, Kansas City, Kansas.

GROUP INVESTIGATION

Group investigation works when teaching students about different Spanish speaking countries. As a matter of fact, it has worked better for me and for my students than any other method (including individualized instruction) that I have used in my classroom before. It is true that it takes preparation, but the results are great. The students develop a sense of interdependency and learn how to work together and get along with each other. All students get to do an equal amount of work improving their idea of self-worth. Low achievers get to work closely with high achievers and usually improve to meet the challenge, and yes, students do have fun. Students pull all of their resources together and do a great job.

The first thing a teacher must do when getting ready for this project is put a list of the countries together and give it to the librarian so that she can pull out all the information the library has about these countries. Then you set some time aside in the library in which students come to do their research.

The hardest task for the teacher is to divide the class into groups, making sure that all sections of the classes are represented. Some times this is hard to do, especially if you teach in a school where most students are from the same sex, race, ethnic background or achievement levels. (For example, Sumner Academy in Kansas City, Kansas, is the school where I teach and sometimes it is hard to find students that are low achievers to go in every group.)

After the groups have been formed, then a leader, a recorder and the participators should get to work on their tasks. The leaders will check every day on the progress of each student and report to the teacher. Before going to the library, the students should have developed a management plan in which they have stated how much they plan to accomplish every day. This plan is to be the basis for the daily check.

After all the work in the library is done, students give all their work to the recorder who will put it together and get the report ready to be turned in. The participators will now start working on their flags, maps, articles, etc., that must also be turned in with the report.

Groups will then proceed to get ready for their oral report for which they could use notes, but that mostly should be familiar enough to them that they will not have to read anything.

Group investigation is great. Try it!

PREPARATIONS FOR GROUP INVESTIGATION
RESPONSIBILITIES:

Teacher:

1. Get library ready. Pull out books. Reserve the library.
2. Make out rule sheet. Explain rules.
3. Divide class into groups. (Remember to use grade, ethnic background, sexual balance.)
4. Assign leader to each group.
5. Design a management plan for the students.
6. Check student progress every day. Make sure that what is not done in the library is done at home.
7. Make sure that work is divided equally.
8. Have a talk with the leader of the group to see how he feels about the progress of his group.
9. Speak to students who are not keeping deadlines.

Student:

1. Get his share of work done daily. What isn't finished in the library should be finished at home.
2. Keep notes and rough draft.
3. Report his progress to the group leader every day.
4. Keep deadline for everything assigned to him. If not able to keep deadlines, explain why to the leader of the group.
5. Ask for help when there are problems.
6. Get ready for oral report and prepare his index cards.

Leader:

1. Make sure work is divided equally.
2. Write out management plan and give it to the teacher.
3. Make sure that management plan is followed.
4. Inform teacher if a student in the group isn't keeping deadlines.
5. Gather all the work when it is completed and turn it in on time.
6. Get group ready for oral report. Make sure that maps, flags, pictures and other visual aides are ready.

LIST OF SPANISH SPEAKING COUNTRIES

1. Spain
2. Mexico
3. Honduras
4. Guatemala
5. Costa Rica
6. Panama
7. El Salvador
8. Nicaragua
9. Cuba
10. Dominican Republic
11. Puerto Rico
12. Venezuela
13. Colombia
14. Ecuador
15. Peru
16. Bolivia
17. Chile
18. Argentina
19. Uruguay
20. Paraguay

ESPANOL I

GROUP REPORT - LATIN AMERICA AND SPAIN

I. Reports should be 12 pages in length (10 if typed)

II. Reports should include a map and a flag of the country.

III. Everyone in the group should do the same amount of work.

IV. Report should be written in ink or typed. (Notes and rough draft should also be turned in.)

V. Report should be accompanied by pictures, newspaper/magazine articles, drawing about the country.

VI. Reports should be turned in on October 28th. There will be a penalty (50 pts. per day) for work turned in late.

VII. The written report is worth 300 pts.

VIII. There will also be an oral report to be done in class. The day will be announced later.

IX. Each oral report should be 15-20 minutes in length (six minutes per group member). Each member must participate.

X. Visual aids (maps, flags, pictures, etc) should be included, and related to oral report.

XI. Oral report must be done on the assigned date.

XII. Oral report should be based on written report.

XIII. Index cards are permitted, but reading will not be allowed.

Suggested Themes To Use With Written Reports

Economy, capital, main cities, main geographical features (rivers, mountains, . . .), climate, history, exports, imports, government, food, culture, agriculture, holidays, customs, differences with U.S., similarities, sports, population, area, religion, educational system, races, main attractions, people in general, updated information about the country (such as president, modern problems, . . .), anything else that you can find.

MANAGEMENT PLAN - DAILY ASSIGNMENTS

Student's Name	Monday	Tuesday	Wednesday	Thursday	Friday

Teacher will write his portion after assignment is completed each day.

INDIVIDUAL ORAL REPORT

NAME_____

COUNTRY_____

Knowledge of Material

_____Excellent
_____Superior
_____Good
_____Poor

Usage of Visual Aides

_____Excellent
_____Superior
_____Good
_____Poor

Length of time

_____Excellent
_____Superior
_____Good
_____Poor

Overall Performance

_____Excellent
_____Superior
_____Good
_____Poor

José Espin was born in Cuba, came to live in the U.S. in 1965, attended the University of Missouri at Kansas City, received a Masters Degree from that institution in 1973, taught at Eisenhower Middle School for sixteen years, and is now teaching at Sumner Academy. This is his second year. He also teaches at the University of Missouria at Kansas City. He has been involved in Cooperative Learning for two years. He is also a member of the Effective Schools team at Sumner Academy.

COOPERATIVE LEARNING AND CREATIVE THINKING

"Something old, something new, something borrowed, something blue," goes a traditional wedding rhyme. Whether Cooperative Learning or creative thinking skills are old or new depends upon the observer's point of view. However, Cooperative Learning can borrow from the area of creative thinking. In fact, cooperative learning groups can be an excellent vehicle for the development of creative thinking skills.

Cooperative Learning deals with the group process and the group product. Creative thinking deals with the skills for problem-solving. These two can be naturally wed together for a more powerful solution-finding process.

Within Cooperative Learning groups, the brainstorming techniques of Osborn (1963) and Parnes (1967) can be readily used. When a cooperative group is given a problem that needs creative solutions, the students can employ fluency, flexibility, originality, elaboration, and imagination in generating those solutions.

The groups can come up with as many terms or solutions as possible (fluency) without evaluating or eliminating any of them. The students then take their list and shift their perspective of the solutions (flexibility). The students can redesign or change the solution to come up with additional solutions to the problem. They can look at various points of view, those who support either the pros or cons, and determine if one's perspective can add to the solution list. The students can create or invent devices or machinery to help solve the problem (originality). The students then can develop a detailed plan (elaboration) for using their machinery or device in solving the problem. Thus, deeper meaning is given to the solutions that they have brainstormed. As a culminating activity, the cooperative group can dream-up or predict the outcomes of implementing their suggested solutions, if those solutions were really carried out (imagination).

Any number of problems can be dealt with in cooperative groups. Using these brainstorming techniques, students can come up with a wide-range of creative solutions. There are other ways to implement creative thinking skills other than those specified by Osborn. Lyman & Foyle (1990) indicated that exercises called Group Builders can help build a positive classroom environment while fostering the creative thinking skills of students.

The selected references listed below contain several materials and processes that can be used in creative problem-solving within cooperative learning groups. Cooperative Learning should begin to move beyond the students' practicing basic knowledge and skills for student achievement gains and begin to move toward creative problem-solving for the attainment of higher level thinking skills.

The marriage of Cooperative Learning and creative thinking is a wedding made in heaven. Let's borrow the old and the new. Let's wed them together so that we won't be blue with just basic information but will be radiant as a new bride — Cooperative Learning and creative thinking are meant to be married!

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